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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/804,021

03/12/2001

Mark Thomas Johnson

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12/12/2008

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

LIANG, REGINA

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

12/12/2008

PAPER

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MARK THOMAS JOHNSON,  
IAIN MCINTOSH HUNTER,  
EDWARD WILLEM ALBERT YOUNG,  
and ADRIANUS SEMPEL

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Appeal 2008-5471  
Application 09/804,021  
Technology Center 2600

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Decided: December 12, 2008

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Before KENNETH W. HAIRSTON, JOHN A. JEFFERY,  
and THOMAS S. HAHN, *Administrative Patent Judges*.

HAHN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejections of claims 1, 4-10, 13-16, and 18-20. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

## STATEMENT OF THE CASE

Appellants invented an improved system for an electroluminescent display device. The display device includes (1) a plurality of electroluminescent pixels, (2) an emitted-radiation photosensor to detect electroluminescent pixel emitted radiation, (3) a reference photosensor to detect ambient radiation without detecting radiation emitted by the electroluminescent pixels, and (4) a drive element that uses signals from both the emitted-radiation photosensor and also the reference photosensor for controlling electric power provided to the electroluminescent pixels.<sup>1</sup>

Claim 15 is illustrative:

15. A display device comprising:

a plurality of electroluminescent pixels,

at least one reference photosensor arranged for detecting ambient radiation without detecting radiation emitted by the electroluminescent pixels,

at least one emitted-radiation photosensor for detecting said emitted radiation [sic] and

a drive element operably connected to the at least one reference photosensor, to the at least one emitted-radiation sensor and to the electroluminescent pixels to control the emitted radiation independently of the influence of ambient radiation detected by the at least one reference photosensor.

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<sup>1</sup> See generally Spec. 3:17-5:23; Figs. 1-3.

The Examiner relies upon the following as evidence in support of the rejection:

Kimura	US 6,518,962 B2	Feb. 11, 2003 (eff. filed Mar. 6, 1998)
Youngquist	US 6,549,179 B2	Apr. 15, 2003 (eff. filed Jul. 27, 1998)

Claims 1, 4-10, 13-16, and 18-20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kimura and Youngquist.

Rather than repeat the arguments of Appellants or of the Examiner, we refer to the Briefs and the Answer for their respective details.<sup>2</sup> In this decision, we have considered only those arguments actually made by Appellants. Arguments that Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

*Appellants' Arguments and the Examiner's Responses*

Appellants argue each of the independent claims 1, 9, and 15 is patentable because the asserted references are deficient concerning recited subject matter. Appellants then assert, without further argument, that the dependent claims are patentable because they include all limitations of their

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<sup>2</sup> Appellants filed an Appeal Brief on September 28, 2005, and on August 9, 2007 filed a Response to Notification of Non-Compliant Appeal Brief Dated July 10, 2007 to submit a revised "Summary of Claimed Subject Matter." A first Examiner's Answer was mailed on January 23, 2006, and a second Examiner's Answer was mailed on October 12, 2007. A Reply Brief addressed to the second Examiner's Answer was filed on December 12, 2007. To be consistent with the Reply Brief, the second Examiner's Answer is cited in this Opinion.

respective base independent claims, and, therefore, for the same reasons as the independent claims are patentable (App. Br. 11-12).

Appellants assert that the “Examiner ... has correctly recognized the failure of Kimura to teach or suggest a reference photosensor that is shielded from radiation emitted by pixels” (emphasis deleted) (App. Br. 10).

Appellants do not argue that Kimura fails to teach other recited limitations.

Appellants then turn to Youngquist and assert that “[a] careful review of *Youngquist* reveals that *Youngquist* also fails to teach or suggest a reference photosensor that is shielded from radiation emitted by pixels” (*Id.*).

Appellants do not argue that Youngquist fails to teach a photosensor to measure ambient light. What Appellants argue is that the Youngquist taught photosensor fails to be (1) “shielded from the emitted radiation” (claim 1), (2) “optically shielded from the emitted radiation for detecting ambient radiation” (claim 9), and (3) “arranged for detecting ambient radiation without detecting radiation emitted by the electroluminescent pixels” (claim 15) (emphasis deleted) (App. Br. 11).

The Examiner responds that “Youngquist clearly teaches that the sensor is sensing ambient light level[s] for providing feedback control to the desired brightness level for the display in different ambient light conditions ...” (citation omitted) (Ans. 5-6). Appellants acknowledge the Examiner’s continued findings based on Youngquist, and “respectfully submit that the Examiner is mistaken” because “[a]t most, Youngquist discloses the location of an aperture 24 for a photosensor, not the location of the photosensor” (emphasis and citations deleted) (Reply Br. 5).

## ISSUE

Have Appellants shown the Examiner erred in arriving at the claimed invention through the asserted combination of prior art teachings? The issue turns on whether the Youngquist photosensor for sensing ambient light levels reasonably corresponds to the recited reference photosensor (1) “shielded from the emitted radiation” (claim 1), (2) “optically shielded from the emitted radiation for detecting ambient radiation” (claim 9), and (3) “arranged for detecting ambient radiation without detecting radiation emitted by the electroluminescent pixels” (claim 15).

## FINDINGS OF FACT

The following Findings of Fact (FF) are supported by a preponderance of the evidence on the record before us:

1. Appellants’ Specification discloses that prior art teaches display devices using electroluminescent pixels that are powered from drive elements or circuits which receive feedback signals from separate photosensors used to measure electroluminescent pixel emitted light or ambient light (Spec. 1:1-21, and 2:20-22).
2. A light-emitting device display system is disclosed by Kimura that includes light-emitting devices, a photosensor to measure emitted light from the light-emitting devices, and a deterioration circuit to process measured emitted light signals and adjust electric currents powering the light-emitting devices (Kimura, col. 1, ll. 9-22; col. 36, l. 33 – col. 37, l. 8; Fig. 19).

3. Youngquist discloses a two-dimensional visual display of light-emitting diodes mounted in a central area of a printed circuit board that “also includes an aperture ... for a photosensor (e.g., used to sense ambient light levels and thus provide feedback control to the desired brightness level for the display in different ambient light conditions)” (Youngquist, col. 1, ll. 9-12; col. 4, ll. 25-42; Fig. 2).

### PRINCIPLES OF LAW

An Examiner in rejecting claims under 35 U.S.C. § 103 must establish a factual basis to support a legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In doing so, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Among the factual determinations is a requirement to ascertain differences between prior art and claims at issue (*Id.*). When claims in issue cover an apparatus, the claimed elements can be defined structurally or functionally, i.e., by what the element does. *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). Even though an apparatus may be claimed either structurally or functionally, a claimed apparatus is only distinguishable from prior art in terms of structure not function. *Id.* at 1477-78. “[A]pparatus claims cover what a device is, not what a device does.” (emphasis deleted) *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469 (Fed. Cir. 1990).

To address obviousness questions involving combinations of known elements, the Supreme Court explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [v. *AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock[, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

*KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740 (2007).

When the Examiner's burden to establish a factual basis for supporting the conclusion of obviousness is met, a shift in burden occurs to the Appellants to overcome the Examiner's prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Arguments for nonobviousness, however, must address combined references as a whole and not separately consider the references without the combination being addressed. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).



## ANALYSIS

### *Obviousness Rejection over Kimura and Youngquist*

#### *Claims 1, 9, and 15*

The Examiner finds Kimura teaching all limitations recited in the independent claims 1, 9, and 15 except for “correction means for correcting the adjustments for an influence of detected ambient light radiation, characterized in that the correction means comprises at least one reference photosensor [for] detecting the ambient radiation, wherein the at least one reference photosensor is shield[ed] from the emitted radiation” (Ans. 4). We agree with the Examiner that Kimura teaches a light-emitting device display system that includes a photosensor to measure the display system emitted light and thereby adjust electric currents powering the light-emitting devices (FF 2).

Appellants acknowledge the Examiner’s findings concerning Kimura, and argue that Youngquist is a deficient reference. The Appellants’ argument is that Youngquist “fails to disclose elements ‘wherein the[; (1)] at least one reference photosensor is shielded from emitted radiation,’ as recited in independent claim 1; [(2)] ‘at least one reference photosensor optically shielded from the emitted radiation for detecting ambient radiation,’ as recited in independent claim 9; and [(3)] ‘at least one reference photosensor arranged for detecting ambient radiation without detecting radiation emitted by the electroluminescent pixels,’ as recited in independent claim 15” (Reply Br. 5).

The Examiner responds that Youngquist is not deficient because:

Youngquist ... discloses a photosensor (24) for detecting ambient light and adjusting the brightness (or current applied to the LED) based on the ambient light detected by the photosensor. Youngquist further discloses that the print circuit board also includes an aperture 24 for a photosensor (e.g. used to sense ambient light levels and thus provide feedback control to the desired brightness level of the display in different ambient light conditions (col. 4, lines 25-43)[]).

(Ans. 4). We agree with the Examiner that Youngquist teaches a light-emitting diode display mounted on a printed circuit board that also includes an aperture for a photosensor used to measure ambient light and thereby control power provided to the diodes (FF 3). Appellants do not argue against the Examiner's finding that Youngquist teaches a photosensor to detect ambient light levels. Instead, Appellants argue that it is what the recited photosensor does to detect an ambient light level that renders Youngquist deficient (App. Br. 9-10; Reply Br. 5-6).

We are not persuaded by Appellants' argument because a claimed apparatus is only distinguishable from prior art in terms of structure not function. *Schreiber*, 128 F.3d at 1477-78. Appellants posit their arguments on recited function, not structure, to assert that Youngquist is deficient.<sup>3</sup> The claimed photosensor is recited as "shielded" or "optically shielded," but no structure to provide such shielding or optical shielding is recited.

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<sup>3</sup> The disputed limitations in the appealed claims are not in means-plus-function format and, therefore, do not incorporate Specification-disclosed or equivalent structures as authorized by 35 U.S.C. § 112, sixth paragraph. *See In re Morris*, 127 F.3d 1048, 1055 (Fed. Cir. 1997) ("There is no comparable mandate in the patent statute that relates the claim scope of non-§ 112 ¶ 6 claims to particular matter found in the specification.").

Additionally, Appellants argue that the claimed photosensor is “arranged for detecting ambient radiation without detecting radiation emitted by the electroluminescent pixels,” but no structure to provide for such arrangement is recited.

In any event, we see no reason why the structures relied upon by the Examiner would be incapable of performing the recited functions, particularly in view of the Youngquist dedicated aperture for the sensor. While it is unclear from Youngquist exactly where the sensor is located relative to this aperture, skilled artisans would nonetheless recognize that the sensor could be disposed at least in part in that aperture which would be capable of providing some shielding as claimed. Recognition for a need for such an arrangement, we find could arise from at least the Youngquist taught use of a photosensor “to sense ambient light levels and thus provide feedback control to the desired brightness level from the display in different ambient light conditions” (FF 3). In particular the Examiner, for such recognition, finds that “[i]f the [Youngquist] ambient light sensor is not shield[ed] from the light emitting elements, the ambient light sensor of Youngquist would not provide a proper feedback control signal to the display driver and the display brightness would not be controlled properly under different ambient light conditions” (Ans. 6). As such, we see no reason why such an arrangement of Youngquist taught structures would be incapable of enabling the Youngquist sensor to perform the recited functions. On the record before us, we therefore find that Appellants have not persuasively rebutted the Examiner’s prima facie obviousness rejection.

For the foregoing reasons, Appellants have not persuaded us of error in the Examiner's rejection of independent claims 1, 9, and 15, and we will sustain the rejection.

*Claims 4-8, 10, 13, 14, 16, and 18-20*

Appellants argue that claims 4-8, 10, 13, 14, 16, and 18-20 respectively depend from independent claims 1, 9, and 15, which Appellants argue recite limitations that distinguish covered subject matter from the combination of Kimura and Youngquist (App. Br. 11-12). Appellants then assert that because these dependent claims include all limitations of their base independent claims, the dependent claims also distinguish over the combined references (*Id.*).

For the reasons set out above, Appellants have not persuaded us of error in the Examiner's prima facie obviousness rejection of independent claims 1, 9, and 15. Moreover, Appellants' arguments do not particularly point out errors in the Examiner's rejection to persuasively rebut the Examiner's prima facie case of obviousness with respect to dependent claims 4-8, 10, 13-14, 16, and 18-20. Therefore, we will sustain the Examiner's obviousness rejection of dependent claims 4-8, 10, 13-14, 16, and 18-20.

## CONCLUSIONS OF LAW

Appellants did not persuasively rebut the Examiner's prima facie obviousness rejection over the collective teachings of the cited prior art as teaching a reference photosensor as claimed that is (1) "shielded from the emitted radiation" (claim 1), (2) "optically shielded from the emitted radiation for detecting ambient radiation" (claim 9), and (3) "arranged for detecting ambient radiation without detecting radiation emitted by the electroluminescent pixels" (claim 15).

## DECISION

We have sustained the Examiner's rejections with respect to all claims on appeal. Therefore, the Examiner's decision rejecting claims 1, 4-10, 13-16, and 18-20 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

## AFFIRMED

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